careers in

LOGISTICS

Bus and Truck Mechanics and Diesel Engine Specialists

Table of Contents *(scroll or use links below to navigate document)*

View Career Video

Job Overview

A major component of logistics is the transportation of goods, supplies, and personnel involved in the supply and delivery chain. Transportation depends in large part on motor vehicles, whether they are trucks, trains, or buses.

Bus and Truck Mechanics and Diesel Engine Specialists maintain and repair the engines of trucks, trains, and buses, so they are a vital link in the chain that moves goods, materials, and people to destinations where they are needed.

Some work mostly on diesel engines of equipment such as farm machines, ships, compressors, and pumps used in oil well drilling and in irrigation. Others work mainly on construction equipment such as cranes, power shovels, bulldozers, and paving machines.

Typical Tasks

- Test drive trucks and buses to diagnose malfunctions or to ensure that they are working properly.
- Inspect, test, and listen to defective equipment to diagnose malfunctions, using test instruments such as handheld computers, motor analyzers, chassis charts, and pressure gauges.
- Raise trucks, buses, and heavy parts or equipment using hydraulic jacks or hoists.
- Perform routine maintenance such as changing oil, checking batteries, and lubricating equipment and machinery.
- Inspect brake systems, steering mechanisms, wheel bearings, and other important parts to ensure that they are in proper operating condition.
- Use handtools such as screwdrivers, pliers, wrenches, pressure gauges, and precision instruments, as well as power tools such as pneumatic wrenches, lathes, welding equipment, and jacks and hoists.
- Adjust and reline brakes, align wheels, tighten bolts and screws, and reassemble equipment.
- Examine and adjust protective guards, loose bolts, and specified safety devices.
- Inspect and verify dimensions and clearances of parts to ensure conformance to factory specifications.

Bus and Truck Mechanics and Diesel Engine Specialists

- Specialize in repairing and maintaining parts of the engine, such as fuel injection systems.

*Detailed descriptions of this occupation may be found in the Occupational Information Network (O*NET) at online.onetcenter.org.*

Important Skills, Knowledge, and Abilities

- Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
- Troubleshooting — Determining causes of operating errors and deciding what to do about it.
- Equipment Selection — Determining the kind of tools and equipment needed to do a job.
- Repairing — Repairing machines or systems using the needed tools.
- Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.
- Installation — Installing equipment, machines, wiring, or programs to meet specifications.
- Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Transportation — Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits.
- Public Safety and Security — Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.
- Problem Sensitivity — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
- Multilimb Coordination — The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.
- Near Vision — The ability to see details at close range (within a few feet of the observer).

Work Environment

Bus and Truck Mechanics and Diesel Engine Specialists work in repair shops that can be noisy, greasy, and dirty. Some work outdoors and, at times, even on the road, in all kinds of weather. The work requires considerable physical activity including some heavy lifting. Mechanics stand, stoop, kneel, crouch, and lay on their backs for extended periods of time during the course of their work.

Hazards in this occupation include exposure to fumes, hand and finger injuries, burns from hot surfaces, and the possibility of electrical shock, although serious accidents can usually be avoided in a clean, orderly shop where safety procedures are followed. Mechanics can fall victim to car accidents when working on vehicles roadside.

Mechanics are expected to have their own tools and precision instruments, which can cost over $1,000. Some employers provide miscellaneous tools and power equipment.

Mechanics may join the International Association of Machinists and Aerospace Workers.

Bus and Truck Mechanics and Diesel Engine Specialists

California's Job Outlook and Wages

The California Outlook and Wage table below represents the occupation across all industries.

Standard Occupational Classification	Estimated Number of Workers 2004	Estimated Number of Workers 2014	Average Annual Openings	2006 Wage Range (per hour)
Bus and Truck Mechanics and Diesel Engine Specialists				
49-3031	25,600	30,300	1,130	$17.05 to $24.94

Wages do not reflect self-employment.
***Average annual openings** include new jobs plus net replacements.*
Source: www.labormarketinfo.edd.ca.gov, Employment Projections by Occupation and OES Employment & Wages by Occupation, Labor Market Information Division, Employment Development Department.

Trends

With a growth rate of 18.4 percent, employment of this group of mechanics is expected to increase faster than the average for all occupations during the projections period. Almost 60 percent of expected job openings will result from the need to replace mechanics who retire or leave the occupation for other reasons.

Diesel technology is becoming more sophisticated, as more and more diesel engines use electronic components to control a variety of functions. Knowledge of basic electronics is becoming essential for Diesel Mechanics to diagnose mechanical problems.

Training/Requirements/Apprenticeships

Mechanics and Diesel Engine Specialists usually follow one of the following training paths:

- Extensive on-the-job training
- Vocational School
- Formal apprenticeship

Many are able to become Diesel Mechanics through years of on-the-job training in related lower-level jobs, such as service station workers, mechanic's helpers, smog technicians, etc.

Training authorities recommend that job seekers complete a formal Diesel Mechanic training program. These one to two-year programs, given by vocational and technical schools and community colleges, lead to a certificate of completion or an associate degree.

A formal four-year apprenticeship is another way to become a Diesel Mechanic. Apprenticeship programs for Diesel Truck and Bus Mechanics usually consist of about 8,000 hours of practical experience working on transmissions, engines, and other components, and at least 576 hours of formal instruction to learn blueprint reading, mathematics, engine theory, and safety. Frequently, these programs include training in both diesel and gasoline engine repair.

However, apprenticeships are becoming less common because employers are reluctant to make such a long-term investment in training, particularly with the proliferation of graduates of postsecondary Diesel Mechanics programs.

Voluntary certification by the National Institute for Automotive Service Excellence (ASE) is valued highly by employers. A California commercial driver license is needed for test driving trucks or buses on public roads.

Bus and Truck Mechanics and Diesel Engine Specialists

Recommended High School Course Work
Completion of high school is required by a growing number of employers. Recommended high school subjects include auto shop, metal shop, machine shop, and science. Good reading and basic math skills are needed to study technical manuals and to keep up with new technology and repair procedures.

Where Do I Find the Job?

Candidates for training or apprenticeship programs can apply to a union local of the International Association of Machinists and Aerospace Workers, or inquire into the curricula of community colleges and vocational schools. Direct application to employers is an effective job search method for journey-level Bus and Truck Mechanics and Diesel Engine Specialists.

Use the *Search for Employers by Industry* feature on the *Career Center* page at www.labormarketinfo.edd.ca.gov to locate employers in your area. Search under the following industry names to get a list of private firms and their addresses:

- Commercial Machinery Repair/Maintenance
- Couriers
- General Automotive Repair
- General Freight Trucking, Local-Long Dist.
- All Other Automotive Repair/Maintenance

Search these **yellow page** headings for listings of private firms:

- Diesel Fuel Injection-Sales & Service
- Railroad Companies
- Truck Repairing & Service
- Trucking
- Trucking-Motor Freight

Where Can the Job Lead?

Experienced Mechanics who have leadership ability may advance to shop supervisors or service managers. Mechanics who have sales ability sometimes become sales representatives. A few Mechanics open their own repair shops.

Related Occupations
Electric Motor, Power Tool, and Related Repairers
Mobile Heavy Equipment Mechanics, except Engines
Motorboat Mechanics
Motorcycle Mechanics
Outdoor Power Equipment and Other Small Engine Mechanics
Refrigeration Mechanics (see *Occupational Guide No. 32*)
Stationary Engineers (see *Occupational Guide No. 234*)

Other Sources

California Association of Regional Occupational Centers & Programs
www.carocp.org

International Association of Machinists and Aerospace Workers
www.iamaw.org

State of California, Division of Apprenticeship Standards
www.dir.ca.gov/das

BNSF Railway
www.bnsf.com

Union Pacific Railroad
www.up.com